IN THE CLAIMS:

Please cancel claims 1-36, 50-62 and 81-169.

1-36. (Cancelled)

37. (Original) An apparatus for pouring a molten metal, comprising:

a crucible having a bottom wall member with an aperture formed therethrough;

an upstanding first tube positioned within said crucible and having a first end located around said aperture and coupled to said bottom wall member and another second end that is closed, said first tube having at least one entrance for allowing the passage of molten metal from said crucible to said first tube;

an upstanding second tube located within said first tube and having one end coupled to said bottom wall member and in fluid communication with said aperture and another end defining an inlet from said first tube, said second tube has a first cavity adapted for receiving a volume of molten metal therein; and

a passageway extending along said second tube for the passage of the molten metal from said at least one entrance to said inlet.

38. (Original) The apparatus of claim37, which further includes a nozzle in fluid communication with said aperture, said nozzle adapted to deliver a substantially vertical stream of molten metal.

39. (Original) The apparatus of claim 37:

which further includes a nozzle coupled with said aperture and in fluid communication with said first cavity of the second tube, said nozzle has an inlet adapted to receive molten metal and an outlet adapted to discharge molten metal; and

which further includes a mechanical housing having a first chamber at a first pressure and a second chamber at a second pressure, and wherein said crucible is located within said first chamber and said outlet of the nozzle is located within said second chamber.

40. (Original) The apparatus of claim 39, which further includes pressure differential means for creating a pressure differential between said first chamber and said second chamber, wherein upon said pressure differential means causing said first pressure to be greater than said second pressure the molten metal within said crucible flows through said at least one entrance and into said passageway along said second tube.

41. (Original) The apparatus of claim 40, wherein said pressure differential means includes a supply of pressurized gas in fluid communication with said first chamber, and wherein said supply of pressurized gas is controlled to increase said first pressure in said first chamber.

42. (Original) The apparatus of claim 40, wherein said pressure differential means includes a quantity of unmelted metal stock extending into said first chamber, and wherein said unmelted metal stock is advanced into the molten metal within said crucible to increase said first pressure.

43. (Original) The apparatus of claim 40, wherein said pressure differential means includes a vacuum in fluid communication with said second chamber, said vacuum being operable to reduce said second pressure.

44. (Original) The apparatus of claim 39, wherein a difference is size between said outlet and said at least one entrance allows the volumetric flow rate of molten metal through said at least one entrance to be substantially greater than the volumetric flow rate of molten metal through said outlet.

45. (Original) The apparatus of claim 44, wherein said at least one entrance defines a plurality of entrances.

46. (Original) The apparatus of claim 39, wherein said nozzle has an upstanding portion that extends into said second tube, and wherein a second cavity is defined between said second tube and said upstanding portion of said nozzle, wherein said second cavity is adapted to receive molten metal and heat said upstanding portion of said nozzle.

47. (Original) The apparatus of claim 37, wherein said first cavity defines a metering cavity holding a predetermined volume of molten metal.

48. (Original) The apparatus of claim 40, which further includes a sensor positioned proximate said outlet, said sensor detects an initial flow of molten metal from said outlet and

communicates with said pressure differential means to stop creating a pressure differential between said first chamber and said second chamber.

49. (Original) The apparatus of claim of claim 39, wherein said nozzle and said first tube and said second tube are parallel to one another, and wherein said at least one entrance is located adjacent said first end of the first tube.

50-62. (Cancelled)

63. (Original) An apparatus, comprising:

a mechanical housing;

a crucible adapted to receive a metal material therein, said crucible positioned within said housing;

a heater positioned adjacent said crucible for heating the crucible and melting the metal received within said crucible; and

a pressure controlled precision pour assembly positioned within said crucible, said pour assembly has an outer cavity with at least one entrance for the passage of melted metal material from said crucible to said outer cavity and an exit for the passage of melted metal material to an inner metering cavity, and wherein said pour assembly has a first state wherein said inner metering cavity receives melted metal material from said outer cavity until said inner metering cavity is full and a second state wherein the flow of melted metal material to said inner cavity is stopped and the melted metal material within said inner metering cavity is discharged.

64. (Original) The apparatus of claim 63, wherein said crucible includes a discharge opening, and wherein in said second state the melted metal material within said inner metering cavity flows through said discharge opening.

65. (Original) The apparatus of claim 64, which further includes a nozzle coupled to said crucible and in fluid communication with said discharge opening.

66. (Original) The apparatus of claim 65:

wherein said mechanical housing has a first chamber and a second chamber, and wherein said crucible is located within said first chamber; and

said second state discharges molten metal when the pressure in said second chamber is greater than the pressure within said first chamber.

67. (Original) The apparatus of claim 65:

wherein said crucible has a bottom wall member, and wherein said discharge opening is formed in said bottom wall member;

wherein said pressure controlled precision pour assembly includes an outer upstanding tube coupled to said bottom wall member and positioned around said discharge opening;

wherein said pressure controlled precision pour assembly includes an inner upstanding tube coupled to said bottom wall member and positioned around said discharge opening,

wherein said inner upstanding tube is positioned within said outer upstanding tube, and said outer cavity is located between said tubes, and wherein said inner metering cavity is positioned within said inner tube.

68. (Original) The apparatus of 67, wherein a difference in area between said nozzle outlet and said at least one entrance allows the volumetric flow rate of molten metal through said at least one entrance to be substantially greater than the volumetric flow rate of molten metal through said outlet.

69. (Original) An apparatus for dispensing a molten metal, comprising:

a mechanical housing having a first chamber with a first pressure and a second chamber with a second pressure;

a crucible positioned within said first chamber of the mechanical housing and adapted to receive a stock of unmelted metal material therein;

a heater positioned adjacent said crucible and adapted for heating the crucible and at least a portion of the unmelted metal material therein to a molten metal state, wherein said crucible holds the volume of molten metal melted by the heater therein;

a tube having a first end and a second end with a flow communication passageway therebetween, said first end positioned beneath a surface of the volume of molten metal within said crucible and a second end positioned in fluid communication with said second chamber and defining a discharge aperture; and

a pressure differential device within said first chamber and acting on the volume of molten metal to increase the pressure thereof and cause molten metal to flow through said passageway and out of said second end, said pressure differential device is defined by at least a portion of the unmelted metal material.

70. (Original) The apparatus of claim 69, wherein said pressure differential device defines a consumable member that is replenished by additional unmelted metal material.

71. (Original) The apparatus of claim 70, wherein said first chamber has an aperture therein adapted for the passage of the stock of unmelted metal material, and a substantially fluid tight seal is formed around the stock.

72. (Original) An apparatus for pouring a molten metal, comprising:

a mechanical housing with a bottom wall member and an interior volume adapted to hold a molten metal; and

a molten metal delivery member having a first molten metal inlet end adapted to receive molten metal from below the surface of the molten metal within the interior volume and a second molten metal outlet end with a passageway therebetween, at least a portion of said delivery member positioned within said mechanical housing, said passageway has a first passageway portion and a second passageway portion and a inflection portion wherein the direction of molten metal flow changes, in a first discharge mode a first direction of molten metal flow within said first passageway portion is from said molten metal inlet to said inflection portion and from said inflection portion through said second passageway portion in a second direction to said outlet.

73. (Original) The apparatus of claim 72, wherein said first passageway portion and said second passageway portion and said inflection portion define a substantially U shape.

74. (Original) The apparatus of claim 72, wherein said inflection portion is above the surface of the molten metal within said interior volume.

75. (Original) The apparatus of claim 74, wherein the pressure of the molten metal within the inflection portion is greater than the pressure at either of said molten metal inlet or said molten metal outlet.

76. (Original) The apparatus of claim 75, wherein said molten metal delivery member is integrally formed.

77. (Original) The apparatus of claim 72, wherein said second passageway portion defines a metering cavity.

78. (Original) The apparatus of claim 72 wherein the cross-sectional area of said passageway varies between said first inlet end and said second outlet end.

79. (Original) The apparatus of claim 78, wherein said first passageway portion tapers prior to said inflection portion.

80. (Original) The apparatus of claim 78, wherein said first passageway has a substantially frustum-conical shape part prior to said inflection portion.

81-169. (Cancelled)